

AWIPS SREC Advocate Checklist

Purpose: Provide System Recommendation and Evaluation Committee members with information they can use to determine the readiness of a projected IT (HW, SW, Comms) change for integration into the AWIPS baseline. The information will also assist planning software development, testing, documentation, and WDTB training resources needed.

Title of Change or New request: Tornado Rapid Update (NEW)

Name and Contact Info of Requester and Advocate: Bob Saffle, 301-713-1975 x107

Section 1: Validation

ATTACH SON, OR RC, or provide similar information from these templates such as a description of change, work involved, and/or requirements.

NWS RC AA892 states the following: The system currently does not provide updates of volume based products until a volume scan is completed. This results in a several minute delay of critical information reaching forecasters. Decisions to issue warnings are often delayed as a result. The Tornado Detection Algorithm Rapid Update (TRU) capability will allow severe weather forecasters to more quickly identify and assess the location and persistence of developing or ongoing Tornadic Vortex signatures. This will facilitate more efficient and timely warnings with a resulting increase in warning lead times.

RWP 175

NEXRAD CCR "NA02-32301 "Create TDA Rapid Update"

See attached NEXRAD ICD changes ([TRU ICDs 070103.pdf](#))

Section 2: Solution Analysis

ATTACH CONCEPT OF OPERATIONS: or description how the change will be used by operators and potential training issues. Identify if the item is a replacement or enhancement to an already existing capability. When early prototype product displays are available, provide sample(s). Template should include technical POC.

The objective of rapid update functionality is to update the TDA algorithm output as rapidly as possible. In weather mode A, the RPG will generate TRU products for each elevation angle.

The product closely resembles the format of the existing TVS product but with the following differences: a) In the graphic attributes table and the tabular alphanumeric table, the symbol ^ will be next to data that is updated with respect to previous volume scan data; and b) The graphically displayed icons will

distinguish between extrapolated and current TVS and ETVS features.

There are a few different ways the AWIPS user will be able to request the TRU product. Routine and one-time requests can be made at one or several elevation angles and using one or several product requests. The TRU product will be elevation based. The elevation angle field in the product request message can be used to specify a specific elevation angle (i.e., send me the TRU at the end of the 1.5 degree cut), how many of the lowest scans should be provided (i.e., send me the lowest 5 TRU products), all elevations below a specific angle (e.g., send me all elevations below 5 degrees elevation), or to provide all elevation scans (i.e., send me an TRU at the end of each elevation scan).

Users will look at the data and see which features are persistent from the previous volume scan, which features have increased in type, delta velocity, or maximum shear, which features are new, and which features have not yet been matched to a current feature. Users will display and analyze current base products with the graphic overlay of TRU icons. They will observe where features are located and the intensity of the feature base in the current volume scan.

Training will describe to users how to request the product, how to display the product, and how to interpret the product data.

IDENTIFY EXTERNAL DEPENDENCIES: list or describe how external interfacing systems will be impacted by this change or if a change to an external system is driving this change. State who will provide post-deployment maintenance support for this change.

The new product has been implemented in NEXRAD RPG Build 5 which will be deployed in March, 2004.

IDENTIFY INTERNAL DEPENDENCIES: list or describe AWIPS IT (HW, SW, Comms) changes that must precede or accompany this change. State who will provide post-deployment scientific and technical support for questions and troubleshooting.

AWIPS will be changed (OB4 target) to request and display this new product. The AWIPS requirements for TRU mirror those implemented for the Mesocyclone Rapid Update Product in AWIPS OB2 (**see attached TRU_1jul03.ppt**). The RPG/Class 1 User ICD was changed to define additional feature types for packet 20. It will distinguishing between current and extrapolated TVS and ETVS features.

The TRU is a new elevation based product. When there are no TVS features identified, each product is 120 bytes in length. During

a widespread severe weather outbreak the maximum product size has been observed to approach 3000 bytes. AWIPS can request TRU products from all elevation angles but a more typical scenario is for the operator to request around 3 products per volume scan.

CONSTRAINTS OR RISKS associated with request: scientific, schedule, impact on users, or impact on system. Quantify likelihood of occurrence and impact.

IDENTIFY PROTOTYPING OR BETA TESTING: has any been done and if so provide results of the “technical goodness” of request.

Technical Coordination (language?)

1. In Development or Implementation Stage?
2. Percentage of Algorithm Enunciation Language (AEL) or Functional Requirements completed?
3. Percentage of other Technical Documentation completed (SRS, ICD, Product Specification)?
4. Percentage of Source Coding completed (Dev or Implementation Phase).
5. Percentage of Implementation Phase Testing completed?